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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,357	09/15/2006	Rene Coquille	128654	2784
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EXAMINER				
TRAN, DZUNG D				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/585,357

Applicant(s)

COQUILLE ET AL.

Examiner

Dzung D. Tran

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leuthold US Patent no. 6,832,053.

Regarding claim 1, Leuthold discloses in Figure 6b, a converter for converting an OTDM type optical signal into a WDM type optical signal, characterized in that it comprises a plurality of devices connected in parallel for temporally subsampling the OTDM type optical signal at a predetermined subsampling frequency, each temporal subsampling device comprising:

a generator for generating clock pulses transmitted at the predetermined subsampling frequency and at a conversion wavelength specific to the subsampling device (i.e., pclk; see col. 7, lines 26-36), and a wavelength converter device (i.e., 620 and 630) adapted to receive at its input the OTDM type optical signal and the clock pulses at the conversion wavelength specific to the subsampling device in order to supply at its output a subsampled signal of the optical signal at the conversion wavelength (col. 7, lines 26-36), the converter device comprising:

a linear optical amplifier 620 (col. 3, lines 6-19) adapted to receive the OTDM type optical signal and a phase modulation to amplitude modulation converter 630.

Leuthold in Figure 6b does not specifically disclose the clock pulses propagating in the opposite direction, the maximum linear power of the amplifier being adjusted so that it can be less than the peak power of the OTDM type optical signal. However in Figure 2b, Leuthold discloses the apparatus can be arranged to have clock pulses propagating in the opposite direction. Thus, it would have been obvious to an artisan at the time of the invention was made to arrange the clock pulses propagating in the opposite direction. One of ordinary skill in the art would have been motivated to do that in order to obtain the output converted signal at a desired wavelength. Furthermore, to adjust the maximum linear power of the amplifier so that it can be less than the peak power of the OTDM type optical signal is merely an engineering design choice.

Regarding claim 2, Leuthold discloses wherein the phase modulation to amplitude modulation converter comprises a delayed differential Mach-Zehnder interferometer (Figure 6b, col. 4, lines 28-41).

Regarding claim 3, Leuthold discloses in Figure 2b, a circulator 220 between the amplifiers 222 and the modulation converter 226 in order to direct the OTDM optical signal to the amplifier and the output signal of the amplifier to the modulation converter.

Regarding claim 4, Leuthold does not specifically disclose a plurality of wavelength-division multiplexed optical signals each transmitted at a wavelength specific to it and a plurality of wavelength converter devices in parallel, each converter

device being adapted to receive at its input the continuous wave signal and one of the wavelength-division multiplexed optical signals in order to supply at its output an OTDM type optical signal transmitted at a temporal frequency that is a multiple of the common frequency of the wavelength-division multiplexed optical signals. However, the difference between the apparatus of Leuthold and claim 4 is a plurality of wavelength-division multiplexed optical signals input to a plurality of wavelength converter devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the system comprises a plurality of wavelength-division multiplexed optical signals each transmitted at a wavelength specific to it and a plurality of wavelength converter devices in parallel, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Furthermore, converting WDM signals into an OTDM signal and vice versa is well known as discloses in Pincemin US 2005/0226623.

Regarding claim 5, Leuthold discloses means (i.e., phase shifter 636) for time shifting wavelength-division multiplexed optical signals relative to each other and a single converter device adapted to receive at its input the time shifted wavelength-division multiplexed optical signals.

Regarding claim 6, Leuthold discloses wherein the phase modulation to amplitude modulation converter comprises a delayed differential Mach-Zehnder interferometer (Figure 6b, col. 4, lines 28-41).

Regarding claim 7, Leuthold discloses in Figure 2b, a circulator 220 between the amplifiers 222 and the modulation converter 226 in order to direct the wavelength-

division multiplexed optical signals to the amplifier and the output signal of the amplifier to the modulation converter.

Regarding claim 8, Leuthold discloses in Figure 2b, a circulator 220 between the amplifiers 222 and the modulation converter 226 in order to direct the OTDM optical signal to the amplifier and the output signal of the amplifier to the modulation converter.

Regarding claim 9, Leuthold discloses wherein the phase modulation to amplitude modulation converter comprises a delayed differential Mach-Zehnder interferometer (Figure 6b, col. 4, lines 28-41).

Regarding claims 10-12, Leuthold discloses in Figure 2b at least one circulator 220 between each amplifier 222 and each modulation converter 226 in order to direct the wavelength-division multiplexed optical signals to the amplifier and the output signal of the amplifier to the modulated signal converter.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a. Leuthold U.S. Patent no. 6,646,784. Optical wavelength converter
 - b. Pincemin U.S. Publication no. 2005/0226623. Optical device and method of converting WDM signal into an OTDM signal

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vanderpuye Kenneth, can be reached on (571) 272-3078. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran

06/05/2009

/Dzung D Tran/

Primary Examiner, Art Unit 2613

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